

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 00/08580

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C12N9/90 C12P41/00 C12N15/61 //(C12P41/00,C12R1:19)

**PTO/PCT Rec'd 21 MAR 2002**

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C12P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, EMBL, STRAND, MEDLINE, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	PIETZSCH M ET AL.: "Isolation and characterization of a new, non pyridoxal-5'-phosphate dependent hydantoin racemase" DECHEMA BIOTECHNOLOGY CONFERENCES, vol. 4 pt. A, 1990, pages 259-262, XP000991534	1
Y	the whole document	2-8
Y	US 5 827 717 A (BOMMARIUS ANDREAS ET AL) 27 October 1998 (1998-10-27) column 1, line 65 -column 2, line 3 column 3, line 25-55 column 4, line 38-53 claims 1-6	2-7

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"Z" document member of the same patent family

Date of the actual completion of the international search

16 March 2001

Date of mailing of the international search report

23/03/2001

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International Application No

PCT/JP 00/08580

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	BOMMARIUS A S ET AL.: "Membrane bioreactors for the production of enantiomerically pure alpha.-aminoacids", CHIRALITY IND. (1992), PP 371-97. EDITOR(S): COLLINS, ANDREW N.; SHELDRAKE, G. N.; CROSBY, J. PUBLISHER: WILEY, CHICHESTER, UK. XP000991099 paragraph '20.1! - paragraph '20.2! paragraph '20.4.1.3! paragraph '20.5!	8
A	WILMS B ET AL.: "Cloning, nucleotide sequence and expression of a new l-N-carbamoylase gene from Arthrobacter aureus DSM 3747 in E. coli" JOURNAL OF BIOTECHNOLOGY, vol. 68, no. 2-3, 19 February 1999 (1999-02-19), pages 101-113, XP004164275 abstract page 102, left-hand column, line 1-18 page 102, left-hand column, line 41 -right-hand column, line 18 page 112, right-hand column, line 16-23	1-8
A	PIETZSCH M ET AL.: "Immobilization of hydantoin cleaving enzymes from Arthrobacter aureus DSM 3747 - effect of the coupling method on the stability of the L-N-carbamoylase" PROG. BIOTECHNOL., STABILITY AND STABILIZATION OF BIOCATALYSTS, vol. 15, 1998, pages 517-522, XP000991023 abstract	8
A	WOHLFAHRT G ET AL: "Immobilization of hydantoin cleaving enzymes;" DECHEMA BIOTECHNOL. CONF., vol. 5 pt. A, 1992, pages 45-48, XP000991533 page 45, line 1-10 page 48, line 1-17	8
P,X	WIESE A ET AL.: "Hydantoin racemase from Arthrobacter aureus DSM 3747: heterologous expression, purification and characterization" JOURNAL OF BIOTECHNOLOGY, vol. 80, no. 3, 14 July 2000 (2000-07-14), pages 217-230, XP004214557 the whole document	1-8

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	<p>OLIVER M ET AL.: "Inverting enantioselectivity by directed evolution of hydantoinase for improved production of L-methionine"</p> <p>NATURE BIOTECHNOLOGY, vol. 18, no. 3, March 2000 (2000-03), pages 317-320, XP002154849 abstract page 320, left-hand column, line 9-13</p>	1-7
E	<p>WO 00 58449 A (DEGUSSA ; CALIFORNIA INST OF TECHN (US)) 5 October 2000 (2000-10-05) page 8, line 25 - page 9, line 17 example 2 claims 20,26,31</p>	1-8

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

EP 00/08580

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5827717	A	27-10-1998	DE 4316928 A	24-11-1994
			AT 196776 T	15-10-2000
			DE 59409542 D	09-11-2000
			EP 0625571 A	23-11-1994
			ES 2150452 T	01-12-2000
			JP 6343462 A	20-12-1994
			SG 46729 A	20-02-1998
			US 5516660 A	14-05-1996
WO 0058449	A	05-10-2000	AU 4178800 A	16-10-2000